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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,258	06/19/2001	Takashi Nishioka	209989US0	9566

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EXAMINER	
THORNTON, YVETTE C	
ART UNIT	PAPER NUMBER
1752	

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/883,258	NISHIOKA ET AL.	
	Examiner	Art Unit	
	Yvette C. Thornton	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) *3-13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 14-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is written in reference to application number 09/883258 filed on June 19, 2001 and published as US 2002/0018958 A1 on February 14, 2002.

Response to Amendment

1. Claims 1-27 are currently pending. Claims 3-13 are directed to a non-elected invention and are withdrawn from further consideration.

Election/Restrictions

2. This application contains claims 3-13 drawn to an invention nonelected with traverse in Paper No. 6 [10152002]. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01. The election requirement was made final in the non-final rejection of Paper No. 7 [12262002].

Notice

3. Claims 1-2 and 14-27 contain intended use language. Intended use recitations and other types of functional language cannot be entirely disregarded. However, in apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); In re Otto, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963). (MPEP 2111.02)

4. Claims 14-15, 19 and 23-27 are product-by-process claims. The product of claims 14 and 15, which is a seal, is obtained by engraving with laser processing a polymer composition. The product of claims 19 and 23, which is a composition, is obtained by kneading a polymer and heating the formed composition. More specifically, the said claims recite method limitations that do not further define the material. Therefore, any method may be used to make the material. Consequently, the burden shifts to Applicant to provide evidence of an unobvious difference between the claimed product and the prior art. Furthermore, "The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion. In re Fessmann, 180 USPQ 324,326 (CCPA 1974), see MPEP 2113.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2, and 14-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Ellul et al. (US 5656693 A), which teaches a process wherein thermoplastic elastomer polymers containing ethylene, alpha-olefin, and vinyl norbornene are crosslinked with a curative. The ethylene content of the said polymer is generally in the range of 40-90 mole% (c. 2, l. 38-62). In the range of 45-90mole%, the taught polymer clearly anticipated the

claimed invention. Suitable curative are selected from organic peroxides such as di-tert-butyl peroxide, t-butylcumyl peroxide, 2,5-dimethyl 2,5-di(t-butylperoxy)hexane, 1,1-di(t-butylperoxy-3,3,5-trimethyl cyclohexane, dicumyl peroxide and benzoyl peroxide (c. 9, l. 20-36). Ellul teaches that those of ordinary skill in the art would understand that additives such as oils, plasticizers, fillers, foaming agents, antioxidants and other components necessary for the processing or end use properties, can be included without departing from the scope of the invention (c. 2, l. 63-67). Fillers can be inorganic fillers such as calcium carbonate, clay, silica, talc, titanium dioxide or carbon black (c. 7, l. 53-c. 8, l. 4). Rubber process oils have particular ASTM designations depending on whether they fall in class of paraffinic, naphthenic or aromatic process oils. The type of process oil utilized will be as customarily used in conjunction with the rubber component. One of ordinary skill would recognize which oil is utilized with a particular rubber (c. 8, l. 1-25). In addition to the taught peroxide, other cure adjuvants or coagents can be used. Examples include triallyl cyanurate, triallyl isocyanurate, divinylbenzene, and polyfunctional (meth)acrylates (c. 9, l. 37-50). It is the examiner's position the said adjuvants meet the limitations of instant claim 16.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

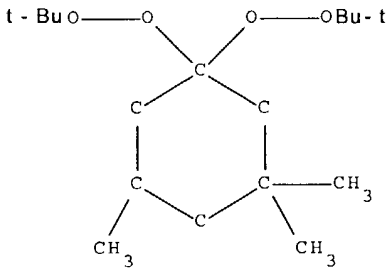
> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-2 and 14-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaudhary et al. (US 6,325,956 B2) in view of Ellul et al. (US 5,656,693 A). Chaudhary exemplifies comparative samples A-C wherein an ethylene/octene copolymer was admixed with dicumyl peroxide. The sample was mixed for 5 minutes, removed and placed in a press where the peroxide reacted to crosslink the polymer. It is the examiner's position that the taught copolymer would have at least 50% ethylene (c. 28, l. 65-c. 29, l. 25). Comparative sample F exemplifies an ethylene/octene copolymer admixed with azodicarboamide blowing agent, zinc oxide blowing agent and dicumyl peroxide (c. 31, l. 47-c. 32, l. 3). It is the examiner's position that the taught blowing agents meet the limitations of the claimed foaming agents. Chaudhary further teaches a procedure for making foam for comparative sample F (c. 32, l. 60-c. 33, l. 35). Chaudhary teaches that coagents, such as triallyl cyanurate and trimethylpropane trimethacrylate are optionally used to improve the crosslinking efficiency (c. 20, l. 39-41). Carbon black is typically added to improve the tensile strength or toughness of the product or to mask the color of the product (c. 20, l. 45-58). Preferably one or more extender oils will be added to the polymer prior to crosslinking. Extender oils are advantageously added to improve processability and low temperature flexibility as well as to decrease cost. Suitable oils include aromatic, naphthenic and paraffinic extender oils (c. 20, l. 59-c. 21, l. 5). Such additives are provided ether prior to, during or subsequent to crosslinking the elastomer. It is the examiner's position that the said coagents meets the limitation of a crosslinkable monomer; carbon black meets the limitation of a reinforcing agent and the extender oils meet the limitation of a plasticizer. It is also the examiner's position that the comparative examples of Chaudhary teach what is conventional

and well-known in the art. It would have been obvious to one of ordinary skill in the art to incorporate known additives such as coagents, carbon black and extender oils into the comparative examples of Chaudhary in order to improve the crosslinking efficiency, tensile strength, and processability of a known composition with the expectation that the formed composition would not have the added improvement of better organoleptic qualities as obtained by the invention of Chaudhary (see Chaudhary c. 2, l. 25-28).

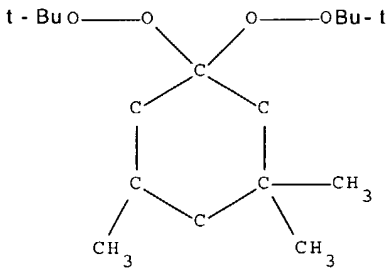
Chaudhary exemplifies the use of dicumyl peroxide, yet fails to exemplify the specific peroxide compounds as set forth in the instant claims. The examiner is of the position that the while Chaudhary only exemplifies dicumyl peroxide, the teaching is to the generic use of peroxides. This position is supported by the background teachings of Chaudhary which discloses that polyolefins are frequently crosslinked using nonselective chemistries involving free radicals generated using peroxides or high energy radiation (c. 1, l. 13-19). Ellul et al. (US 5656693 A) teaches a process wherein thermoplastic elastomer polymers containing ethylene, alpha-olefin, and vinyl norbornene are crosslinked with a curative. Suitable curative are selected from organic peroxides such as di-tert-butyl peroxide, t-butylcumyl peroxide, 2,5-dimethyl 2,5-di(t-butylperoxy)hexane, 1,1-di(t-butylperoxy-3,3,5-trimethyl cyclohexane, dicumyl peroxide and benzoyl peroxide (c. 9, l. 20-36). Ellul serves to establish that organic peroxides are well known in the art of curing agents. One of ordinary skill in the art would have been motivated by what is known in the art, and in light of the teachings of Ellul to substitute the exemplified dicumyl peroxide of Chaudhary for any of the disclosed peroxides of Ellul and expect reasonably similar results.

Response to Arguments

9. Applicant's arguments filed January 23, 2004 have been fully considered but they are not persuasive. Applicants argue that the rejection of claims 1, 2 and 14-27 under 35 USC 102(b) is obviated by amendment. The examiner respectfully disagrees. The pending claims contains the choice of 1,1-bis(t-butylperoxy)-3,,3,5-trimethylcyclohexane. See line 14 of claim 1; line 14-15 of claim 2; lines 14-15 of claim 14; line 15 of claim 15; line 18 of claim 19; and line 18 of claim 23. The prior art reference to Ellul et al. (US 5,656,693 A), as discussed above, teaches that suitable curatives are selected from organic peroxides such as di-tert-butyl peroxide, t-butylcumyl peroxide, 2,5-dimethyl 2,5-di(t-butylperoxy)hexane, 1,1-di(t-butylperoxy-3,3,5-trimethyl cyclohexane, dicumyl peroxide and benzoyl peroxide (c. 9, l. 20-36). It is the examiner's position that 1,1-di(t-butylperoxy-3,3,5-trimethyl cyclohexane and 1,1-bis(t-butylperoxy)-3,,3,5-trimethylcyclohexane are structurally equivalent and therefore Ellul clearly anticipates the claimed invention. This position is supported by information obtained from a search of the STN-CAS registry. Both 1,1-di(t-butylperoxy-3,3,5-trimethyl cyclohexane and 1,1-bis(t-butylperoxy)-3,,3,5-trimethylcyclohexane have the structure  and the registry number 6731-36-8 (see the enclosed documents).

10. Applicants further argue that the prior art rejection of claims 1-2 and 14-27 under 35 U.S.C. 103(a) over Chaudhary et al. (US 6,325,956 B2) in view of Ellul et al. (US 5,656,693 A) is obviated by amendment. The examiner respectfully disagrees. Chaudhary exemplifies the use of dicumyl peroxide, yet fails to exemplify the specific peroxide compounds as set forth in the instant claims. The examiner is of the position that the while Chaudhary only exemplifies dicumyl peroxide, the teaching is to the generic use of peroxides. This position is supported by the background teachings of Chaudhary which discloses that polyolefins are frequently crosslinked using nonselective chemistries involving free radicals generated using peroxides or high energy radiation (c. 1, l. 13-19). Ellul et al. (US 5656693 A) teaches a process wherein thermoplastic elastomer polymers containing ethylene, alpha-olefin, and vinyl norbornene are crosslinked with a curative. Suitable curative are selected from organic peroxides such as di-tert-butyl peroxide, t-butylcumyl peroxide, 2,5-dimethyl 2,5-di(t-butylperoxy)hexane, 1,1-di(t-butylperoxy-3,3,5-trimethyl cyclohexane, dicumyl peroxide and benzoyl peroxide (c. 9, l. 20-36). Ellul serves to establish that organic peroxides are well known in the art of curing agents.

One of ordinary skill in the art would have been motivated, by what is known in the art and in light of the teachings of Ellul, to substitute the exemplified dicumyl peroxide of Chaudhary for any of the disclosed peroxides of Ellul, specifically 1,1-di(t-butylperoxy-3,3,5-trimethyl cyclohexane and expect reasonably similar results. As discussed above in paragraph 9, it is the examiner's position that 1,1-di(t-butylperoxy-3,3,5-trimethyl cyclohexane and 1,1-bis(t-butylperoxy)-3,,3,5-trimethylcyclohexane are structurally equivalent and therefore Ellul clearly meets the limitation of the claimed invention. This position is supported by

information obtained from a search of the STN-CAS registry. Both 1,1-di(t-butylperoxy-3,3,5-trimethyl cyclohexane and 1,1-bis(t-butylperoxy)-3,,3,5-trimethylcyclohexane have the structure  and the registry number 6731-36-8 (see the enclosed documents).

The examiner maintains the rejections of record.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

12. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvette C. Thornton whose telephone number is 571-272-1336. The examiner can normally be reached on Monday-Thursday from 8:00 am to 6:30 pm.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F. Huff, can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yvette C. Thornton
Patent Examiner
Art Unit 1752

yct
March 31, 2004